

III. REMARKS

1. Claims 15 and 25 are amended.
2. Claim 25 is amended to address the noted objections.
3. Claims 15-18, 20, 23 and 25-26 are not anticipated by Mukojima under U.S.C. §102(e).

Claims 15 and 25 are amended to recite that a reference direction and a set of selected directions are attached to the at least one sound source. The at least one parameter enables the direction dependent filtering arrangement to generate a signal that represents sound propagating from the at least one sound source along a line in a direction that deviates from the reference direction. These features are not disclosed or suggested by Mukojima.

Mukojima discloses a sound apparatus for directing a sound image of a virtual sound source at a designated source point to a listener in a virtual field. (see e.g. Abstract) In Mukojima, a sound image of a virtual sound source is positioned relative to a listener in a virtual sound field by filtering audio signals of left and right channels through left and right filters. The solution disclosed by Mukojima models "anisotropy" of a human head as a listener. The listener experiences a similar sound in a different way when the position of a sound source with respect to the listener has changed (e.g. when angle Θ in figures 3 and 5 of Mukojima is changed).

However, Mukojima does not model anisotropy of a sound source, i.e. the fact that the sound source radiates different sound power density (Watts/square meter) to different directions. For example, the solution of Mukojima does not model a situation in which the angles Θ and Φ of FIG. 2 are kept constant and the orientation of a sound source in point P_s is changed. For example, the sound source in point P_s of FIG. 3 could be a

trumpet that first faces towards point Po and then is turned to face away from Po. This situation is not modeled by Mukojima.

However, as recited by Applicant in the claims, the direction dependent filtering arrangement has at least one parameter to partly determine a filtering effect of the arrangement, where the at least one parameter enables the arrangement to generate a signal that represents sound propagating from the at least one sound source along a line in a direction that deviates from the reference direction. Thus, Applicant's claims are directed to modeling anisotropy of a sound source, unlike Mukojima, which models anisotropy of the ears on the head of the listener. Rather, Mukojima is directed to "sound image positioning" (Col. 1, lines 53-59), and pans a sound image of a virtual sound source to a listener (Col. 1, lines 60-64). This is not what is claimed by Applicant.

As claimed by Applicant, the direction dependent filtering arrangement is able to model situations where the sound source radiates different power intensities (e.g. Watts/square meter) to different directions (i.e. an anisotropic source). Thus, for example the claimed invention could model a situation in which the angles Θ and Φ of FIG. 2 in Mukojima are kept constant and the orientation of the sound source Ps is changed. Referring to the prior example, the sound source in point Ps could be a trumpet that first faces toward Po and is then turned to face away from Po.

The solution disclosed by Mukojima is not able to model a situation in which angles Θ and Φ FIG. 2 are kept constant and orientation of a sound source in Point Ps is changed. Therefore, Mukojima cannot disclose or suggest a direction dependent filtering arrangement adapted to generate a signal that represents sound propagating from a sound source along a line in a direction that deviates from a reference direction.

Thus, since each feature recited by Applicant in claims 15 and 25 is not found in Mukojima, the claims cannot be anticipated. Claims 16-18, 20, 23 and 26 should be allowable at least by reason of their respective dependencies.

4. Claims 27-28 are not unpatentable over Mukojima under 35 U.S.C. §103(a), at least by reason of their dependencies.

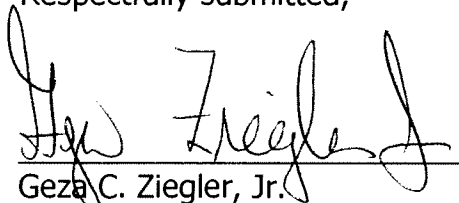
5. Claim 24 is not unpatentable over Mukojima in view of Jok under 35 U.S.C. §103(a) at least by reason of its dependency.

6. Applicant appreciates the indication of allowable subject matter in claims 19 and 21-22, but believes the present claims should be allowable for the reasons stated above.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

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Respectfully submitted,



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